Fall 9-1-2005

CRT 121.00: Introduction to Programming

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The University of Montana

College of Technology

Fall Semester 2005

CRT121 Introduction to Programming
Prerequisites: CRT101, MAT100
Credits 3

Rhonda Tabish
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Office hours by appointment

M 2:10 – 4:00 HB04
W 3:10 – 4:00 HB17, **F** 2:10 – 4:00 HB04

COURSE DESCRIPTION:

An introduction to programming and problem-solving methodologies using Visual Basic. Techniques include problem identification, logic planning, program coding, and program debugging. Structured programming and documentation techniques are stressed.

STUDENT PERFORMANCE OBJECTIVES:

1. Students will design and implement the user interface in a windows-based environment using an event driven, object oriented programming language.

2. Students will design and implement logical expressions containing operators, variables, and constants.

3. Students will design and implement the standard programming constructs of loops, repetition, and conditionals to solve problems.

4. Students will structure tasks into logical functions and procedures.

5. Students will create and manage variable and array structures for storing information.

6. Students will design and implement multiple methodologies for the user to input and output information with a computing system.

7. Students will demonstrate and apply documentation techniques.

8. Students will construct efficient error control structures.

TEXT: Programming in Visual Basic.Net, by Julia Case Bradley and Anita C. Millspaugh, Irwin

EVALUATION:

A final grade will be determined by total points received on assignments and quizzes in relationship to total points available.

Assignments **will not** be accepted after **4:00** p.m. of the date due. In class exercises cannot be made up.

Makeup tests **are not** offered. Emergency situations are handled privately on a case by case basis.

GRADING SCALE:

93 - 100	A
87 - 92	B
80 - 86	C
74 - 79	D

FINAL EXAM:

Monday, December 12, 1:00 – 3:00

ACADEMIC INTEGRITY:
Students are expected to follow the University of Montana Student Code. The code includes the following:

Academic Misconduct:
… Academic misconduct is defined as all forms of academic dishonesty, including but not limited to:

Plagiarism: Representing another person's words, ideas, data or material as one's own.

Substituting or arranging substitution, for another student during an examination or other academic exercise: Knowingly allowing others to offer one's work as their own.

Student Code copies are available at Student Services or www.umt.edu/studentaffairs/

DISABILITY ACCOMMODATION: Eligible students with disabilities will receive appropriate accommodations in this course when requested in a timely way. Please speak with me after class or in my office. Please be prepared to provide a letter from your DSS Coordinator.

CRT121 Introduction to Programming
Course Outline

I. Introduction to Programming
   A. What is a Program
   B. Describing Visual Basic Environment
   C. Writing a Visual Basic Project
   D. Debugging

II. Creating a User Interface
   A. Types of Controls
   B. Working with Multiple Controls
   C. Setting Properties for User Convenience
   D. Coding Controls

III. Logical Expressions with Operators, Variables, and Constants
   A. Variables and Constants
   B. Calculations
   C. Counting and Accumulating Data
   D. Val Function

IV. Conditionals, Error Control
   A. If Statements
   B. Conditions
   C. Nested If Statements
   D. Error Control
   E. Message Boxes

V. Logical Functions and Procedures
   A. Common Dialog Boxes
   B. Writing General Procedures
   C. Calling Event Procedures
   D. Passing Variables to Procedures
   E. Using Logical Functions

VI. User Input and Output Methodologies
   A. Defining, Creating, and Coding Menus
   B. Multiple Forms
   C. Standard Code Modules
   D. Variables and Constants in Multiple Form Projects
   E. Formatting Data
   F. Sending Output to the Printer

VII. Loops and Repetition
- A. List Boxes and Combo Boxes
- B. Do/Loops
- C. For/Next Loops
- D. Using the MsgBox Function
- E. Using String Functions

VIII. Array Structures
- A. Case Structure
- B. Single-Dimension Arrays
- C. For Each/Next Statements
- D. User-Defined Data Types
- E. Using List Boxes with Arrays
- F. Multi-Dimensional Arrays

IX. Data Files
- A. Data Files
- B. Sequential File Organization
- C. Trapping Program Errors
- D. The Err Object
- E. Random Data Files
- F. Using a List Box to Store a Key Field
- G. Updating a Random File